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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Abayomi I. Owei, et al. Art Unit 1755
Serial No. 10/619,198
Filed July 14, 2003
Confirmation No. 6367
For ADHESION PROMOTION IN PRINTED CIRCUIT BOARDS
Examiner Anthony J. Green

June 30, 2005

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SIR:

SUPPLEMENTAL LETTER TO THE PATENT OFFICE

This letter supplements applicants' RCE filing on June 23, 2005.

With applicants' RCE filing they request entry of previous Amendment B and full and fair consideration of the Remarks therein. All pending claims are submitted to be patentable for the reasons stated in those Remarks.

In addition to the positive reasons for patentability emphasized in Amendment B, applicants respectfully submit that there are clear factual and legal deficiencies in the Office's basis for maintaining the rejection of claims 1, 10-17, 26-43, 45-47, 50-52, and 54-58. In particular, it is asserted in the Advisory Action:

Applicant is arguing limitations not in the independent claims. The independent claims recite "alcohol" which is encompassed by the polyethylene glycol of the references. Note that applicant is only arguing limitations found in the dependent claims.

However, one limitation of the independent claims is "an alcohol effective to increase copper-loading":

Claim 1. An adhesion promotion composition for enhancing adhesion between a copper conducting layer and a dielectric material during manufacture of a printed circuit board, the adhesion promotion composition comprising a corrosion inhibitor, an inorganic acid, an oxidizing agent, **and an alcohol which is effective to increase copper-loading in the composition**, and the adhesion promotion composition being initially substantially free of transition metals having a tendency to destabilize the oxidizing agent.

The Office's assertions that applicants argued only limitations in the dependent claims and did not argue limitations in the independent claims are incorrect because on page 15 of applicants' Amendment B, applicants specifically argue that claim 1 is patentable because it requires "an alcohol which is effective to increase copper-loading in the composition"¹:

With regard to the remaining claims rejected over the Ferrier et al. references --- claims 1, 14, 15, 28, 29, 30, and 31 --- they all specifically require use of an alcohol "which is effective to increase copper loading in the composition." The Office has asserted that because Ferrier et al. disclose the use of "polyethylene glycols," and this encompasses the triethylene glycol applicants state has this "copper-loading" characteristic, this claim requirement is inherently met. However, "polyethylene glycols" encompass "triethylene glycol," "tetraethylene glycol," "pentaethylene glycol," "decaethylene glycol," and any number of repeating units. The references therefore disclose a genus which encompasses the triethylene glycol species. In the context of claim 1, that is, the references disclose a genus which encompasses an enormous number of species, only a small proportion of which are the species which "are effective to increase copper-loading in the composition." As stated in MPEP 2131.02 and MPEP 2144.08, disclosure of a genus like

¹The undersigned apologizes if any confusion resulted from the fact that this discussion appeared after applicants' arguments regarding some of their dependent claims.

"polyethylene glycols" does not anticipate or render obvious a species encompassed thereby unless there is further specific teaching in the reference in the direction of the species. In the present situation there is no such teaching. In fact, in view of the fundamental distinctions between a) the species (Carbowax and Pluronic) Ferrier et al. disclose and b) the compounds applicants note are part of applicants' species, Ferrier et al. teach away from applicants' species.

Accordingly, this basis for the continued rejection is factually deficient.

The basis for the continued rejection also contains a legal deficiency because it is based on the Office's assertion that "The independent claims recite 'alcohol' which is encompassed by the polyethylene glycol of the references." This is an improper basis for rejection because the standard for obviousness is not whether the subject matter is "encompassed" by the prior art. It appears the Office is confusing the concepts of a) claim scope and infringement with the concepts of b) anticipation and obviousness. A genus such as "alcohol" certainly encompasses all alcohol species, including, e.g., triethylene glycol, pentethylene glycol, methanol, and "alcohols effective to increase copper-loading." "Alcohol" therefore encompasses thousands of species. However, a genus such as "alcohol" does not anticipate or render obvious any particular species unless there is some further specific teaching in the reference toward the particular species:

MPEP 2131.02 [ANTICIPATION]: When the compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or

well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). If one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be "at once envisaged." One may look to the preferred embodiments to determine which compounds can be anticipated. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

MPEP 2144.08 [OBFVIOUSNESS]: The patentability of a claim to a specific compound or subgenus embraced by a prior art genus should be analyzed no differently than any other claim for purposes of 35 U.S.C. 103. "The section 103 requirement of unobviousness is no different in chemical cases than with respect to other categories of patentable inventions." *In re Papesch*, 315 F.2d 381, 385, 137 USPQ 43, 47 (CCPA 1963). A determination of patentability under 35 U.S.C. 103 should be made upon the facts of the particular case in view of the totality of the circumstances. See, e.g., *In re Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc). Use of per se rules by Office personnel is improper for determining whether claimed subject matter would have been obvious under 35 U.S.C. 103. See, e.g., *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995); *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."); *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (Federal Circuit has "decline[d] to extract from *Merck [& Co. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that... regardless of how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it."). See also *In*

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re Deuel, 51 F.3d 1552, 1559, 34 USPQ2d 1210, 1215
(Fed. Cir. 1995).

By analogy, this can be compared to a situation where there is a patent claim for "A chair having 32 legs" and there is a prior art reference disclosing a chair having "at least four legs." Certainly the description "chair having at least four legs" encompasses "a chair having 17 legs," but it does not anticipate or render it obvious.

In view of the above, applicants respectfully request entry of their previous Amendment B, full and fair consideration the Remarks on pages 12-17 thereof, and allowance of all pending claims.

Respectfully submitted,



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